

To the Commission:

I am a licensed extra class amateur radio operator, call sign KA4PUV, and I have been licensed since 1980. I am active in several modes of operation that utilize amateur bands in the HF spectrum, including SSB, QRP CW, and PSK. Two of these modes utilize low power for long distance communications, but all depend on relatively low background noise for adequate reception for successful two-way communication.

I am not opposed to BPL technology per se. However, because of what I have observed first hand and seen documented in the Raleigh, North Carolina area during the Progress energy tests, I have serious concerns about the potential negative effects of a wide scale deployment of BPL technology without adequate safeguards to prevent harmful interference. (See, e.g., <http://www.arrl.org/news/stories/2004/04/22/2/>.)

With the foregoing in mind, I offer the following comments on the NPRM:

RE: P.6, Para. 11-12.

The major reason for advancing BPL service has been, and continues to be the availability of an additional source of broadband Internet access. However, based on what I have been able to determine, there are, as this paragraph states, other sources of broadband technology already available. Accordingly, BPL will not offer a new technology, nor do its proponents argue that their technology is superior to existing broadband services.

They do, however, assert that this technology will increase competition. However, in evaluating the interest, convenience and necessity to the public, it must be asked whether this technology offers inherently cheaper access, or whether such access would be available to those who cannot currently get broadband from other sources.

I would submit that if the cost of providing this service is the same as the cost of providing other types of broadband, there is no cost benefit to the public.

Advocates also assert that BPL will be available to rural areas that are not currently served by other types of broadband technology. However, it appears that this technology is no easier or less expensive to deliver than established broadband technologies, so there is a very real question as to whether it will ever be economically feasible to serve rural areas with relatively low population densities as promised.

RE: P.7, Para. 14-15.

Harmful interference from Part 15 BPL devices is real, and it has been shown by the amateur community to cover a broad range of frequencies. Again, I must cite the Progress Energy tests. I know the engineer who has taken the lead on behalf of the amateur community, Frank Lynch, W4FAL, very well. He is a highly qualified

RF engineer, and he is not prone being an alarmist. The interference documented by his team, as well as those of other amateurs, including the ARRL is real, and it is significant. With all due respect to the Commission, the hard data gathered

by such amateurs seems to have been largely ignored, or at least dismissed without meaningful evaluation, by the Commission.

RE: P.10, Para. 20.

As noted above, interference has been observed, and at least in the case of the North Carolina Progress Energy BPL tests, it has been reported to both the company

and the Commission. Also as noted from the ARRL Press account cited above, as of

the date of the filing of these comments, it has not been resolved. The position

adopted by Progress Energy counsel is that the interference generated by its BPL installations is not harmful. Whether or not it is harmful, is, of course, a matter

open to debate, but it is highly troubling that a potential commercial user is so

quick to assert no harmful interference rather than make a good faith effort to resolve the problem. It is precisely this sort of response that gives licensed amateurs such great concern about how aggressively existing Part 15 rules will be

enforced to protect licensed users of the spectrum.

RE: Pp.10-11, Para. 22-23.

This contention is simply not validated by actual experience. The radiation may be only for a mile or two, but if these devices are deployed over a wide area as presently engineered, they will form, in effect, an RF blanket over the entire geographical

area where they are deployed.

RE: P.12, Para. 28

The argument in favor of a more stringent certification process for BPL Part 15 devices is simply that these devices are anticipated to be spread over a wide geographical

area, and at least some of them will be operating through above-ground lines that

will act as radiators to some degree. In short, the potential for interference from these devices is much greater than other kinds of Part 15 devices.

RE: P.14, Para. 31.

While I do not agree that the current emission limits are stringent enough, I support

the Commission's commitment to protect licensed users of the affected spectrum.

That being said, the Commission must put teeth into any new rules that address BPL deployment so that interference issues are required to be addressed quickly. Accordingly, I propose the following for the Commission's consideration:

1. You must insure that any equipment approved for use is not likely to generate harmful interference outside of the immediate vicinity of the installation under realistic conditions.

Equipment currently in use in the Raleigh, NC area has been clearly shown to generate harmful interference on amateur frequencies across the entire ten meter band sufficiently strong such that two transceivers located approximately one mile from a BPL test site and operating on SSB could not communicate with each other over a distance of two miles using 100 W PEP. This was from an installation serving a single subdivision. BPL installations using similar equipment over a citywide area may reasonably be expected to render that entire area unusable for two way voice communications.

2, You must require that any commercial installation of BPL equipment demonstrate that it is not likely to cause harmful interference to licensed services by requiring field testing of the installation before any commercial service is offered or sold. You must also require that the dates, times and affected frequencies of such testing be publicly announced well in advance of the testing so as to allow possibly affected licensees to monitor the tests to determine whether they experience harmful interference. Such testing will allow both the service provider and licensees to identify and correct potential problems before an area depends on the service. Publicizing the tests will allow licensees to correctly identify the source of the interference. Moreover, it will allow such problems to be corrected without undue pressure on the service provider to push the service back online to satisfy subscriber demands.

If this Commission allows BPL service providers to implement the service first and then address interference complaints, this will result in a serious practical enforcement dilemma. An active BPL installation may provide Internet service to an entire community. In so doing, if harmful interference is generated, it may affect only a single licensee. If such harmful interference cannot be corrected, current Part 15 rules are clear. The offending Part 15 device must be shut down. As a practical matter, however, the net effect of such action could potentially be to deny Internet service to hundreds

of customers in order to eliminate harmful interference to only one licensee. Such disruption would be a serious inconvenience to subscribers at best, and at worst, it could have a serious economic impact on them as well. It would certainly have an economic impact on the BPL provider. Neither the customers nor the provider would be terribly pleased with the licensee whose complaint causes the shutdown.

Thorough and well-publicized testing of an entire system before the system is used commercially may be initially troublesome to the BPL provider who may have to deal with a number of complaints, but it will potentially result in far fewer problems or service interruptions once the system is up and running commercially. It will also minimize possible friction between many unlicensed users and a few affected Commission licensees. In short, this requirement will strike a reasonable balance that respects both Part 15 requirements and economic realities.

3. In any rulemaking, you must require that BPL providers institute a procedure to investigate and correct as necessary all interference complaints within a reasonable period of time.

I would propose that all complaints be required to be investigated by the BPL provider by the close of the second business day following receipt of the complaint, and that a formal written response be provided by the end of the third working day. These deadlines could be extended due to certain well-defined circumstances such as widespread power outages or natural disasters.

Such time frames may seem short until you consider that they are reasonable response times for customers who lose service. In addition, a timely response must be provided so that if the interference is not corrected, the matter may be referred to the Commission for action under Part 15.

In field tests of BPL in the Raleigh, NC area, Progress Energy initially responded in to BPL interference complaints under the experimental BPL license by allowing its engineers to work closely with local amateurs to address these complaints. However, after a very short period of time, Progress instructed the lead engineer representing local amateurs, Frank Lynch, to direct all complaints to Progress counsel. As previously noted, the Progress response then changed from addressing the issue to a denial of the problem.

As an attorney myself, I can categorically assure this Commission that techniques

to deal with RF interference were not a part of my legal training, and I doubt that they were a part of the legal training of Progress counsel. However, what the Progress experience shows is that the Commission must mandate that BPL providers develop and implement procedures to quickly deal with complaints. If their equipment is as flexible as has been asserted, the interference should be able to be quickly isolated and eliminated. However, if a provider is unable or unwilling to adequately address a bona fide complaint, it must not be allowed to drag out a response, thus denying a licensee the ability to raise the complaint to the Commission staff for action, and perhaps more importantly, the ability to operate.

RE: P.15, Para. 33.

Per my preceding comments, I support the Commission's intent to prevent harmful interference. However, I do not think that the case has been made that the possible benefits of BPL are sufficient to outweigh the potential for increased harmful interference.

RE: P.15, Para. 35.

Factually, this is simply not correct. Amateurs do not generally orient their antennas, or those that can be oriented, to move away from harmful interference from unlicensed devices. Antennas that may be easily reoriented, such as beam antennas, are oriented in the direction of desired communications. Rarely, if ever, are antennas oriented to avoid power line noise. Indeed, in my own personal experience, the change in orientation of a high frequency dipole made little difference when I experienced a line noise problem. (In all fairness to Progress Energy, that particular problem was resolved by Progress in a timely manner.)

RE: P.16, Para. 36.

As noted above, I support such testing, and I encourage this testing to be publicly announced in advance.

RE: P.17, Para. 39.

I agree. There is a strong incentive for BPL providers to not see service interruptions to their customers once the system is implemented. However, this must translate into rules that mandate prompt resolution of bona fide interference complaints.

RE: P.18, Para. 41.

I support this, but I also note that notching of amateur frequencies where harmful

interference may be present could present a challenge based on existing BPL technology.

In addition, notching will not address the problem of interference that then shifts

to non-amateur frequencies. This could well be a difficult technical challenge that will not be as easy to meet as currently thought by some.

RE: P.18, Para. 42.

I support this.

RE: P.18, Para. 43.

I support this, but I question whether it will be feasible. If so, it would be a useful tool for isolating interference.

RE: P.19, Para. 45.

I support the principle, for reasons noted above, but I am not conversant enough with the technical standards to comment on whether they are adequate as proposed.

Conclusion:

I do not want to see BPL technology "stopped". However, what has me concerned is the quantitative difference between BPL and other types of devices currently addressed by part 15 rules. A reading of the current rules makes clear that this part is intended to allow for and regulate relatively low power devices that might create harmful interference when located within close proximity to devices used by duly licensed Commission services.

As currently being used, as well as intended for use in the future, BPL devices are in a class by themselves. In an area where BPL is fully implemented through overhead wires, BPL equipment generates RF over a large swath of frequencies, and at a greater field strength than virtually all other existing Part 15 devices, and the generation of RF is pretty much continuous. The issue for myself, as well as other licensed users of that spectrum, is whether the generated RF will create harmful interference that cannot - or will not - be quickly corrected.

The challenge for all is both technical and legal. It is technical in the sense that equipment must be engineered and deployed to standards that are likely to not cause harmful interference. It is legal in that where interference is experienced, licensed users of spectrum must have meaningful recourse to quickly obtain relief from bona fide interference. I sincerely hope any rules ultimately adopted are able to adequately address these two challenges.

Respectfully submitted,  
Norman Young

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